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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/746,219	12/22/2000	Diego Carmello	4702-116	1142
23117 7590 02/17/2009 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER ELVE, MARIA ALEXANDRA				
ART UNIT		PAPER NUMBER		
3742				
MAIL DATE		DELIVERY MODE		
02/17/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/746,219

Applicant(s)

CARMELLO ET AL.

Examiner

M. Alexandra Elve

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13, 14 and 26-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13, 14 and 26-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-884)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-14 & 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harada et al. (USPN 5,445,786) in view of Burk et al. (USPN 6,171,556).

Harada et al. discloses a metallic monolith which is coated for gas phase reactions. The structure is used as a catalyst or carrier for catalysts. The monolith is heat resistant and made of aluminum, chromium and iron. Additionally, other metals such as copper, tin, calcium and manganese may be used. Cell densities range from 6 to 1500 cells/in² (0.9 to 233 cells/cm²).

Harada et al. does not specifically teach an exothermic reaction.

Burk et al. discloses a monolith member used in gas phase reactions. The crossflow monolith has a catalyst zone providing a geometric surface area per unit volume of from about 3 to 35 cm²/cm³. Additionally, there are 9 to 800 gas flow passages per cross-sectional square inch. The monolith is generally cylindrical may be constructed from refractory metals, stainless steel, kanthal, fecralloy and so forth. A washcoat is applied to the monolith. The monolith is used in transferring heat and there is exothermic activity.

It would have been obvious to one of ordinary skill in the art at the time of the invention to note that the exothermic reaction as taught by Burk et al. would be functional in Harada et al. because they are both directed to catalytic method and apparatus.

Claims 26-28, 31-36 & 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harada et al. and Burk et al., as stated above and further in view of Strasser et al. (USPN 5,099,085).

Harada et al. and Burk et al. do not teach the length of the monolith, selective chlorination or endothermic reactions.

Strasser et al. discloses selective chlorination reactions and/or oxychlorination reactions in tube reactors and monolith catalyst supports. Additionally the following is taught by Strasser et al.: Selective chlorination reactions and/or oxychlorination reactions, for example the conversion of ethylene-containing waste gases with chlorine to 1,2-dichloroethane, or the conversion of ethylene with hydrogen chloride and air and/or oxygen to 1,2-dichloroethane and water or the conversion of methane with chlorine and/or hydrogen chloride and air and/or oxygen to chlorinated methanes, or the reaction of ethane with chlorine to vinyl chloride and chlorinated ethanes, are frequently carried out in reactors over fixed-bed catalysts, with the reactants in the gaseous form. The system may also have alkali metal chlorides, alkaline earth metals chlorides or rare earth metal chlorides and as well chlorides, oxides and oxychlorides of metals such as copper, manganese, iron, cobalt, nickel or platinum. Ethane is also present in the

system. Most of the reactions are exothermic; however, both exothermic and endothermic reactions may use the monolith.

The monolithic catalyst supports have a length from a few centimeters up to about 20 cm and a cross-sectional shape corresponding to the reactor tubes, the internal diameter of the reactor tubes for such highly exothermic reactions being usually 20 to 50 mm.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the monolith for selective chlorination and/or oxychlorination as taught by Strasser et al. in the Harada et al. monolith because this is merely an application for the monolith catalyst support. Furthermore, the monolith length of Harada et al. could be easily modified to the length of Strasser et al.

Claims 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harada et al., Burk et al. and Strasser et al., as stated above and further in view of Muller et al. (USPN 5,986,152).

Harada et al. does not specifically teach an amount of the coating or intermediate layer.

Muller et al. discloses a supported catalyst and its use in oxychlorination of ethylene. A supported catalyst includes: 0.5-15 wt. % of one or more Cu-II compounds, the quantitative amounts referring to copper metal; 0.1-8 wt. % of one or more alkali metal compounds, the quantitative amounts referring to alkali metal; 0.1-10 wt. % of an oxide mixture including; 80-95 mole % of oxides of cerite rare earths with

atomic Nos. 57 to 62, except promethium, and 5-20 mole % of zirconium dioxide, and the quantitative amount of refers to the oxides of the mixture, and the remainder up to 100 wt. % being γ and/or α -aluminum oxide as support material, wherein the support material has a total pore volume in the range from 0.65 to 1.2 cm.sup.3 /g, and wherein the supported catalyst is present in the form of cylindrical hollow bodies having at least one passage channel.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the 8% or less of alkali as taught by Muller et al. in the Harada et al. coating because this is one of variety of washcoatings which may be used.

Response to Arguments

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is 571-272-1173. The examiner can normally be reached on 7:30-4:00 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu B. Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

February 12, 2009.

/M. Alexandra Elve/
Primary Examiner, Art Unit 3742